

**NORTH NANTASKET BEACH**

**MANAGEMENT PLAN**

**HULL, MASSACHUSETTS**

**June 26, 2007**

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**BEACH MANAGEMENT PLAN**  
**TO**  
**PRESERVE, PROTECT AND MAKE ACCESSABLE NORTH NANTASKET BEACH**  
**HULL, MASSACHUSETTS**

**INTRODUCTION**

With a landmass of 2.5 square miles and a remarkably varied 27 miles of coastline the Town of Hull has the exceptionally challenging task of preserving and protecting the wetland resources of a relatively stable, yet fragile beach upon which exists one of the most densely, populated and almost completely built-out towns in the Commonwealth. Along with its unique geography and geology comes the responsibility to manage this unique natural environment.

The Town's coastline includes bays, estuaries, rocky promontories, beaches and bluffs. Its bayside has sandy coves, inlets, and marshes, a tidal pond, and a state designated Area of Critical Environment Concern. On the ocean-facing side there are two large crescent beaches, a small sandy pocket cove bounded by large rock outcrops, a boulder-strewn point, rocky cliffs, and one 3.5-mile long, sandy beach.

This management plan addresses North Nantasket Beach, the northernmost 2 miles of the 3.5 mile sandy beach (see Appendix A). While the edge of much of the Town's coast is clad with revetments and vertical concrete seawalls, a stressed, manmade, and sacrificial dune protects this beach.

**WETLANDS PROTECTION ACT**

The Massachusetts Wetlands Protection Act, (WPA) regulates activities in various wetland areas in order to protect public interests. The wetland areas of primary focus for this management plan include coastal beach, barrier beach, and coastal dune. Other relevant wetland areas include land under the ocean and land containing shellfish. The public interests protected by these wetland areas include storm damage prevention, flood control, and protection of wildlife habitat, and may include protection of marine fisheries and shellfish.

The WPA Regulations provide general performance standards that guide the review and permitting of activities to insure that no adverse effects will occur to resource areas. There are no performance standards associated with Barrier Beaches. The applicable standards are found in 310 CMR 10.27 (3-7) for Coastal Beaches and in 310 CMR 10.28 (3-6) for Coastal Dunes. In general, the protected physical characteristics of coastal beaches and dunes include form, volume and the ability to respond to wave and wind action.

However, fencing and other devices designed to increase dune development, as well as plantings compatible with the natural vegetative cover, may be permitted.

Under the WPA, coastal beaches are significant to storm damage prevention, flood control and wildlife habitat. Tidal flats, which are a part of coastal beaches, are likely to be significant to the protection of marine fisheries and, where there are shellfish, to land containing shellfish. Barrier beaches are significant to storm damage prevention and flood control and are likely to be significant to the protection of marine fisheries and wildlife habitat and, where there are shellfish, the protection of land containing shellfish. Coastal dunes are likely to be significant to storm damage prevention and flood control; all coastal dunes on barrier beaches and the coastal dune closest to the coastal beach in any area are significant to storm damage protection and flood control. Coastal dunes are also often significant to the protection of wildlife habitat. Areas along North Nantasket Beach are also mapped as estimated and priority habitats for state-protected rare species [Common Tern (*Sterna hirunda*) and Seabeach Dock (*Rumex pallidus*)] and they contain shellfish, primarily surf clams. Therefore pursuant to the WPA, activities that may result in altering, dredging, filling and removing these natural resources are subject to regulation by the Hull Conservation Commission.

## **GEOLOGIC AND MORPHOLOGIC BACKGROUND**

The coastal geologic and morphologic construct of Nantasket Beach is critical to the protection of the occupants of the Town of Hull as well as Hull Bay and the various islands located on the south side of the entrance channel to Boston Harbor. The beach is a low-lying strip of land comprising a range of unconsolidated sediments deposited by currents, wave, tides and winds over the last several thousand years. It extends roughly parallel to the trend of the coast and connects drumlin deposits including Strawberry Hill in the central portion and Allerton Hill to the north. It is designated as a barrier beach by the Massachusetts Office of Coastal Zone Management. In the regulations to the Massachusetts Wetland Protection Act (WPA), barrier beaches are, in part, defined as “generally consisting of coastal beaches and coastal dunes”. WPA regulations CMR 310 10.29 further define barrier beaches.

The northernmost 2 miles of this 3.5-mile beach is generally characterized by a wide, gently sloping, fine-grained sandy beach and a narrow, fairly continuous, vegetated primary frontal dune. A majority of this dune is located within a 50-foot wide public way known as Beach Avenue. In contrast to this section of dunes, a 1.5-mile long concrete seawall fronts along the coastal beach to the south. The Management Plan does not address this area, which is owned and managed by the Massachusetts Department of Conservation and Recreation (DCR).

## OVERVIEW

A management plan for North Nantasket Beach must be, first and foremost, a plan that addresses natural resource functions and values. This Plan for North Nantasket Beach defines how the Town of Hull will manage North Nantasket Beach to protect and maximize its wetlands values while providing access and preserving its recreational value.

Storms, erosion, floods and other hazards are of overriding importance to the evolution and maintenance of developed barriers and to the people who occupy them. Effective protection of the beach resource areas (i.e., Beach and Dune Area) from high tides and flooding and against damage by the ocean under storm conditions requires sufficient vegetation, elevation and width to dissipate the force of the waves. The Beach and Dune Area lies between the western boundary of Beach Avenue and the extreme low water of the Atlantic Ocean (see Appendix A). In order to protect public and private property the dunes should provide as continuous and as unbroken a barrier for the entire length of North Nantasket Beach as is possible given that controlled and managed access points must be maintained. The beach should also protect public and private property, and in addition, provide for recreational uses to all. Accordingly, the Town of Hull has a vital interest in the continued protection and maintenance of the Beach and Dune Area, and has the right to perform annual routine preservation and cause their restoration in the event of damage or destruction.

Coastal beaches serve as a sediment source for dunes and subtidal areas. Steep storm waves cause beach sediment to move offshore, resulting in a gentler beach slope and greater energy dissipation. Less steep waves cause an onshore return of beach sediment, where it will be available to provide protection against future storm waves. A coastal beach at any point serves as a sediment source for coastal areas downdrift from that point. The oblique approach of waves moves beach sediment alongshore in the general direction of wave action. Thus, the coastal beach is a body of sediment that is moving along the shore.

Finally, coastal beaches are extremely important in recycling of nutrients derived from storm drift and tidal action. Vegetative debris along the wrack line is vital for resident and migratory shorebirds, which feed largely on invertebrates that use the wrack as habitat. Washed-up seaweed, algae, eel grass and marsh plants may provide a source of nutrients and seeds for the pioneer species of flora, a foraging habitat for shorebirds and a substrate for accumulating sand. However, excessive amounts or masses of seaweed may provide a breeding habitat for fecal coliform and create a health hazard to humans. Below the wrack line in the lower intertidal zone are infauna (invertebrates such as mollusks and crustacea) that are also eaten by shore birds.

Coastal dunes aid in storm damage prevention and flood control by supplying sand to coastal beaches. Coastal dunes protect inland coastal areas from storm damage and flooding by storm waves and storm elevated sea levels because such dunes are higher than the coastal beaches that they border. In order to protect this function, coastal dune volume must be maintained while allowing the coastal dune shape to conform to natural wind and water flow patterns. Vegetation cover contributes to the growth of coastal dunes by

providing conditions favorable to sand deposition and stability by anchoring the dune. The grass responds to being buried by sending up a new rhizome (underground stem). From the new rhizome, a new shoot forms. The rhizomes also help the plant spread horizontally up to 6'-10' annually. American beach grass grows up to 2'-3' tall. The plant does produce a seedhead and seeds, but much of the spreading is through its rhizomes.

The Beach and Dune Area is a combination of dynamic landforms that have changing characteristics and boundaries according to seasonal and storm generated processes. Sediment is exchanged between these two areas as a result of storm overwash and wave erosion, as well as windblown accumulation and wind scouring. The vegetated boundary that typically separates the dune from the beach can migrate landward or seaward. Therefore, these two areas are protected as one natural beach and dune system.

## **PART 1- REGULATIONS**

- 1.1 The Hull Board of Selectmen and the Town Manager shall enforce this Plan.
- 1.2 Construction is prohibited in the Dune Area except for Access Control Structures if permitted by the Conservation Commission.
- 1.3 No person shall be in the Dune Area unless:
  - One is on an access control structure, walkway or dune platform; or
  - For the purpose of constructing or maintaining the dune or allowed structures with the permission of the Town of Hull and permitted by the Conservation Commission,
  - For the purpose of removing debris, which shall be done with great care not to damage the dune or beach grass,
  - For the purpose of enforcement of this Plan or,
  - For emergencies as deemed necessary by Town of Hull Police and/or Fire Departments and/or the Town Manager and/or Board of Selectmen.
- 1.4 Christmas trees may not be randomly discarded on the beach. Christmas trees may be used as a sand trapping mechanism only if pre-approved by the Conservation Commission through the Wetland Protection Act process.
- 1.5 The removal, cutting, burning, or destruction of Natural Vegetation, Sand Fence, or such other types of dune protection devices as may be approved by the Town of Hull in the Dune Area is prohibited, except as necessary for construction of maintenance authorized pursuant to the Plan and permitted by the Conservation Commission.

- 1.6 The removal or relocation of sand, cobbles and other naturally occurring sediments either from or within the Beach and Dune Area is strictly prohibited, except as permitted by the Conservation Commission.
- 1.7 Sand and cobbles which are transported upon public and/or private lands by action of wind, tides, storms or any combination thereof shall be returned to the Beach and Dune Area free of foreign material and debris including, but not limited to tar macadam, asphalt/concrete, aluminum/vinyl siding, lobster traps, glass, trash, grass clippings, branches, and leaves as soon as practicable in accordance with the practices stated herein. Sand and cobbles may be temporarily stored off-site before return to the Beach and Dune area. Sand and cobbles shall not be placed on top of dune vegetation and shall be placed along the seaward edge of the dune or at unvegetated breaches of the dune or at Point Allerton Cove at the discretion of the Conservation Administrator the designated person. Sand replaced in dune area shall be vegetated as soon as practicable. Existing areas of beach grass will tolerate up to 1 ½ feet of cover without the need to revegetate.
- 1.8 No dune shall be directly or indirectly lowered or reduced in height by the action or inaction of any person or entity. One of the purposes of this Plan is to achieve the maintenance of the dunes at the highest practical height. Therefore, if the dune has been lowered, the Town may cause the dune to be restored to its pre-existing elevation. The Town may maintain and replace, on a routine basis, sand fencing, other access control structures, signs, and beach grass (at appropriate planting time) that have been significantly damaged or destroyed.
- 1.9 No motor vehicles, including town vehicles, shall access or gain entry to, or park upon any Dune Area except as may be necessitated for allowed construction, public safety, or for dune maintenance, and for emergencies as declared by the Town of Hull and permitted by the Conservation Commission. Any disturbed area of the dune shall be returned to its previous condition immediately by such persons causing damage, and as stated in the Plan. Vendors shall conduct their business in a manner that will not damage existing dunes and only in areas so designated by the Town of Hull.
- 1.10 Debris removal shall be done in accordance with the procedures set forth in PART 3.
- 1.11 There shall be no open or closed fires permitted on dunes. Fires on the beach are prohibited except with permission from public safety officials.
- 1.12 No animals shall be allowed on the beach from June 1st through September 15<sup>th</sup>. At all other times animals on the beach must be on a leash under control of the owner or caretaker who shall be held liable for the animal's behavior. Dogs are not allowed on the dunes. All animal excrement must be

picked up by the owner or caretaker immediately, removed from the beach, and disposed of properly in accordance with Town by-laws.

- 1.13 Barrels shall be placed on the beach, at least 10 feet seaward from the toe of the dune. Barrels shall be picked up by hand to be emptied. Barrels shall be limited to beach garbage only.
- 1.14 Household rubbish shall not be deposited in beach barrels.

**NOTE: Sections 1.13 and 1.14 regarding the handling of trash are included in this draft and represent current policy until and unless changed. The Town intends to have a public discussion concerning the possibility of establishing a carry-in/carry-out policy.**

## **PART 2 - ACCESS**

The Town is committed to providing the residents of Hull, their guests and visitors with well-maintained, safe and appropriate access to North Nantasket Beach for recreational use while preserving the environmental functions of the Beach and Dune Area. Given this goal, access - consisting of three defined types: 1) Pedestrian; 2) Handicapped; and 3) Vehicular - is an important component of the Beach Management Plan.

On North Nantasket Beach people engage in a variety of activities including: wildlife observation, bird watching, strolling, fishing, jogging, sun bathing, picnics, resting and reading and even napping. While many of these activities are passive forms of recreation others can have significant impacts on the resource area on which they take place. Some of these activities may cause:

- Destruction of Dune vegetation (loss of vegetation can lead to blow-outs and general lowering of dune profiles and impact wildlife habitat); and,
- Destruction of the wrack line (loss of sand-binding plants which would otherwise start growing there).

The following regulations are intended to manage and minimize impact upon the resource areas:

- 2.1 Access paths shall be available at all current street endings.
- 2.2 Access points at locations designated by the Conservation Commission shall be delineated with well-maintained fencing.
- 2.3 Access points shall be 48 inches wide at all points along the fenced pathways.
- 2.4 Access points should be angled to the southeast to provide for maximum

- storm protection during northeast storm events.
- 2.5 The slope of the access path should be 1:7.5 at openings with a sand path and 1:5 at access points with a removable non-skid ramp.
  - 2.6 Any pedestrian access structure, if utilized, will consist of a removable, non-skid ramp that will facilitate pedestrian access without harming the underlying dune.
  - 2.7 Educational signs will direct pedestrians to approved access points and educate them as to the protective nature of the dunes.
  - 2.8 The Beach Management Committee shall monitor the condition of the dune system, inspecting all openings and access points in the spring and in the fall and inform the Town Manager of any necessary repairs or alterations.
  - 2.9 Access points at street openings will be re-graded in the spring, if necessary, according to approved slope and width specifications.
  - 2.10 Handicapped access or access for the physically challenged will be available
  - 2.11 Beach-accessible wheelchairs are available at the fire station at A St. and Nantasket Avenue. Information regarding the availability of beach-accessible wheelchairs will be provided to the public at the corner of A Street and Beach Avenue.
  - 2.12 The access point at A Street shall meet ADA requirements for handicapped accessibility including but not limited to appropriate ramps, platforms slope and parking.
  - 2.14 Off-Road vehicle use is allowed for approved users. The off-road vehicle user group consists only of Town approved users such as those engaged in beach maintenance, storm clean-up law enforcement, emergencies and public safety.
  - 2.15 Emergency and non-emergency vehicle access is permitted only at A Street, the DCR access south of Phipps Street, and at X Street access points.
  - 2.16 Vehicles on the beach shall not be allowed to exceed the speed limit of 15 M.P.H.
  - 2.17 Vehicles are required to be at least ten feet away from dune area or dune vegetation (seaward side of the dune) at all times except when engaged in dune replenishment or dune nourishment.
  - 2.18 Vehicles shall be used on the beach in a manner that will not create ruts on the beach and will vary their path to achieve this.
  - 2.19 In an emergency, emergency vehicles shall not be restricted.
  - 2.20 A non-structural ramp for vehicular use at A Street may consist of unconsolidated sediment not to exceed a minimum, practicable width and

shall extend seaward of the vegetated dune line.

- 2.21 Board of Health regulations prohibit food vendors from blocking beach accessways and from parking or driving on the dunes.

### **PART 3 - MAINTENANCE**

Maintenance includes both proactive and reactive procedures that occur throughout the year. An exceptional effort must be made to minimize negative effects that may take place when maintaining both the hardscape and landscape features of the beach and dune system. Beach grass planting, filling of dune escarpments with sand reclaimed and obtained through permitting from dredging, and the continued oversight and care of manmade structures such as access points and fencing are proactive efforts to protect and stabilize the resource. Removal of debris in order to provide our citizens and visitors with a litter free beach, removal of excessive amounts of debris and fly infested seaweed that has been declared a health hazard, and emergency measures conducted in the wake of severe weather events are all reactive response to man-made or naturally occurring actions.

Keeping the beach litter free consists of special, episodic, and scheduled maintenance to remove a range of man-made materials from the Beach and Dune Area. Marine debris from recreational, commercial and fishing boats is often caught up in the wrack line. Landside litter, including plastic bags and pieces, balloons, trash and garbage, often blows up into dunes and beach grass areas. Cleaning efforts typically include the removal of a mixture of these materials. The maintenance and cleaning of Beach Avenue, which parallels the dune, must also be taken into account as sand and cobble often may be deposited on the road surface by wind and storm overwash. In order to not restrict pedestrian and vehicular passage and to conserve this resource, this sand and cobble must be removed from the road surface as frequently as possible, cleaned of any debris, and replaced on the beach or stored for future use. Removal of sand and/or cobble and grading of sand and cobbles on the Beach and Dune Area will have an adverse effect on storm damage prevention and flood control and is not allowed, except to move sediment deposited as the result of beach replenishment activities, or as permitted by the Conservation Commission.

Typically, in rare species habitat and significant migratory shorebird staging areas, debris removal may be prohibited from April 1 to September 15<sup>th</sup>. Since this may not apply to Nantasket Beach, more flexibility in scheduling maintenance is reflected in the Plan.\* In general, there will be a major cleanup in the spring, regularly scheduled removal of debris through the summer, and no such activity, except in the event of a health emergency, in the fall and winter.

\* The Town of Hull awaiting a response to a request for information from the Natural Heritage and Endangered Species Program regarding any restrictions related to rare species.

- 3.1 Beach grass (*Ammophila breviligulata*) may be planted successfully from November 15<sup>th</sup> to April 15<sup>th</sup> when the ground is not frozen. The holes shall be spaced 12 to 18 inches apart, in staggered rows, two or three culms to a hole, and 7 to 9 inches below the dune surface. Pack the sand around the plants to eliminate air from the root zone.
- 3.2 In order to provide for effective restoration on the Dune Area, the Town of Hull may erect, or cause to be erected, suitable fencing in accordance with such standards as may be adopted by the Conservation Commission, and adopted by this Plan. An appropriate location for fencing would be at the seaward toe of the dune. It can be used to trap wind blown sand and build up the dune where none or very little exists. It can be used to promote the expansion of an existing dune. In both of these cases, a zigzag configuration (with sides facing the northwest and southwest directions) is most effective during the dominant winter and summer winds, respectively. Fencing can also be used to limit or direct pedestrian traffic away from the dunes and this can be constructed in a linear configuration.
- 3.3 Dune/beach profiles shall be done in the winter and summer, or at a greater frequency if deemed necessary by the Conservation Administrator or designated person. The Conservation Administrator or designated person shall be required to take profiles at W, Lewis, and Phipps streets. The profiles shall extend from Beach Avenue seaward to the approximate low tide line. The purpose of the dune profiles will be to create a database for the studying of the movement of the dunes. The dune profiles may be performed by the modified Emery rod method as well as using other surveying techniques. The information obtained shall be used for the preservation, maintenance, and restoration of the dunes.
- 3.4 Suitable, regulatory, and cautionary signs shall be erected regarding beach policies and relevant town by-laws.
- 3.5 No vehicle is permitted within 10 feet of the seaward edge of the dune.
- 3.6 "Debris" is any manmade substance either washed up or left behind on the beach. Examples include balloons, plastic bags, buoys, lobster traps, and pilings. It does not include natural vegetation or seaweed known as wrack.
- 3.7 A spring cleanup shall be scheduled in late spring, but no later than the Friday proceeding Memorial Day; the Town shall commence its annual beach cleaning. The cleaning or removal of debris and seaweed may be conducted by hand or by a rake-type machine. The Town Manager and Conservation Administrator shall decide whether to use hand or machine labor. Cleaning by hand shall be conducted in accordance with section 3.10. Cleaning by rake-type machine shall be conducted in accordance with section 3.11.
- 3.8 Summer maintenance shall occur on a regular basis from Memorial Day to

Labor Day. If conditions dictate, routine beach maintenance may occur at any time of year other than those named in this section. Such cleanup shall be performed in accordance with the standards contained in this section.

3.9 Summer Cleaning:

(A) Debris: Debris shall be removed from the beach only by persons who have participated in the annual spring training or its equivalent sponsored by the Beach Management Committee and/or Conservation Administrator. In general, debris removal shall be conducted by hand. From the Friday preceding Memorial Day through June 30, debris shall be removed from the beach three to seven days per week. When removing debris less than seven days per week, efforts shall be made to space the cleanup days. From July 1 through Labor Day, debris shall be removed five to seven days per week. From the day following Labor Day through September 30, the town shall endeavor to remove debris from the beach three to seven days per week. Where removing debris less than seven days per week, efforts shall be made to space the cleanup days. In the event of a heavy accumulation, the Town Manager and Conservation Administrator shall decide whether to use hand or machine labor. Cleaning by hand shall be conducted in accordance with section 3.10. Cleaning by rake-type machine shall be conducted in accordance with section 3.11.

(B) Seaweed: Seaweed shall be removed as necessary as determined by the Conservation Administrator and Town Manager. The Conservation Administrator's and Town Manager's determination shall be based on, without limitation, weather reports, thickness of the seaweed, and odor of the seaweed. Seaweed shall be cleaned from the beach in the area between five feet seaward of the base of the dune and mean high water. Seaweed shall be removed from the beach only by persons who have participated in the annual spring training or its equivalent sponsored by the Beach Management Committee and/or the Conservation Commission. In general, summer seaweed removal shall be conducted with hand tools. In the event of a heavy accumulation reaching a height of at least three inches, the Town Manager and Conservation Administrator shall decide whether to use hand or machine labor. Cleaning by hand shall be conducted in accordance with section 3.10. Cleaning by rake-type machine shall be conducted in accordance with section 3.11.

3.10 The use of any hand tools other than pitch forks and/or rakes must be

approved by the Beach Management Committee and/or the Conservation Administrator prior to use. Individuals carrying out the cleanup shall make reasonable efforts to remove as little sand as possible from the beach. Individuals shall rake up the debris and seaweed, shake it out to release as much sand as possible, and place it in the bucket of a front-end loader or in a truck. In performing the cleanup, the Town may place both a front-end loader and a truck on the beach. Vehicles accessing the beach for cleaning purposes may access the beach only at designated access points, which are the following: south of Phipps Street, A Street, and X Streets. The front-end loader will maintain its bucket in an upright position since its purpose in the cleanup is to assist in the movement of debris. The front-end loader is not to use its bucket to move or remove sediment (including sand and cobble) unless due to the nature of the debris, the Conservation Commission grants permission to do so. There shall be no disturbance to dunes, beach grass, beach plants, or other natural vegetation. All mechanical equipment shall be kept a minimum of ten feet from the seaward edge of the dune.

- 3.11 A rake-type machine may be used to remove masses of seaweed if approved by both the Beach Management Committee and the Conservation Commission prior to use. Prior to the initial use, the Town shall make all reasonable efforts to test the rake under consideration and to discuss the qualities of the rake with other towns using the same make and model. The operator of the machine shall have a clear view of where the rake is relative to the surface of the beach to allow greater control in avoiding scraping or moving beach material during the seaweed removal process. At all times, the rake must remain at or above the beach surface. Individuals carrying out the cleanup shall make reasonable efforts to remove as little sand and cobble as possible from the beach. Individuals shall rake up the seaweed and shake it out to release as much sand as possible before removing the seaweed from the beach. If the rake-type machine requires it, the Town may place both a front-end loader and a truck on the beach to facilitate the cleanup. Vehicles accessing the beach for cleaning purposes may access the beach only at designated access points, which are the following: south of Phipps Street, A Street, and X Street. The front-end loader shall maintain its bucket either in an upright position or at grade in a stationary position. The front-end loader is not to use its bucket to move or remove sediment (including sand and cobble) unless due to the nature of the debris, the Conservation Commission grants permission to do so. With permission from the Conservation Administrator, seaweed may be re-deposited back in the ocean during receding or lowering tide cycles. Debris must be removed from the seaweed before re-depositing it in the ocean. There shall be no disturbance to dunes, beach grass, beach plants, or other natural vegetation. All mechanical equipment shall be kept a minimum of ten feet from the seaward edge of the dune.

- 3.12 At the end of the summer season, the Beach Management Committee and the Conservation Commission may review all maintenance procedures the cleanup process and shall invite all persons involved to participate in the review. The purpose of this review is to recommend any modifications to routine maintenance procedures. The Beach Management Committee and the Conservation Commission, either individually or together, shall provide a written summary of its findings to all interested parties.
- 3.13 The Town of Hull DPW may remove dune sand from Beach Avenue as necessary to maintain the legal width to insure public safety access. The wind-blown, drifting sand shall be deposited as stated in section 3.7 of the Plan.
- 3.14 Emergency access requires that Beach Avenue be maintained at a width of at least 18 feet.
- 3.15 Maintaining the width of Beach Avenue shall be conducted in accordance with a permit issued by the Conservation Commission.

#### **PART 4 – HEALTH EMERGENCY PROCEDURES**

There may be instances when debris and wrack on the beach pose a threat to public health and safety and an emergency cleanup is required.

- 4.1 For the purposes of this section, the term "Health Agent" refers to the Health Officer of the Town of Hull or his designee.
- 4.2 The Health Agent may declare an Emergency Health Condition when he determines that conditions on the beach pose a present or imminent threat to the health or safety of the general public. These conditions include but are not limited to:
  - 4.3 Accumulations of seaweed that have become infested with flies or other insects;
  - 4.4 Accumulations that are of sufficient height to indicate that an insect infestation is likely; and,
  - 4.5 Clams, mussels, shellfish or any other organic material that is in a rotting condition or are likely to be rotting and possibly infested with insects soon.
- 4.6 Any person may notify the Health Agent of a possible Emergency Health Condition (EHC). Upon receiving such notice or upon his own suspicion, the Health Agent shall investigate the possible condition. Upon investigating the possible condition, the Health Agent shall determine whether an EHC does not exist, does not exist but may be imminent, or exists.

- 4.7 Upon determining that an Emergency Health Condition exists, the Health Agent shall notify the Town Manager that such a condition exists. The Town Manager shall notify the DPW and Conservation Administrator or Conservation Commission that such a condition exists. Emergency cleanup shall be performed in accordance with the Wetlands Protection Act and the Beach Management Plan.
- 4.8 Upon notification to the DPW that an Emergency Health Condition exists and that the Conservation Commission has issued an emergency permit; the DPW shall within 24 hours of such notice commence cleanup procedures of the condition and shall complete such cleanup within 72 hours of notification.
- 4.9 Such procedures shall follow the guidelines outlined in Sections 3.10 and 3.11 in this Plan, including but not limited to the following: In performing the emergency cleanup, the Town may place both a front-end loader and a truck on the beach to facilitate the cleanup. The front-end loader shall maintain its bucket either in an upright position or at grade in a stationary position. The front-end loader is not to use its bucket to move or remove sediment (including sand and cobble) unless due to the nature of the debris, the Conservation Commission grants permission to do so. Follow up restoration of the beach and water quality testing of the nearshore waters may be required.
- 4.10 Individuals carrying out the emergency cleanup shall make reasonable efforts to remove as little sand as possible from the beach.
- 4.11 All material causing the condition shall be removed from the beach.
- 4.12 DPW employees, contractors, and other individuals carrying out the emergency cleanup shall follow all local bylaws and state and federal laws pertaining to coastal wetland protection under emergency procedures. All Town employees doing so shall have participated in a beach cleanup seminar or its equivalent sponsored by the Beach Management Committee and/or the Conservation Commission held in preparation for the current season, or the most recent seminar, if the Committee has not yet held the seminar for the current season.
- 4.13 The Conservation Administrator or designee shall supervise all emergency cleanup work on the beach pursuant to an Emergency Health Condition and shall have the authority to stop and/or alter the cleanup.
- 4.14 At the next Beach Management Committee meeting following the determination that an Emergency Health Condition exists, the Committee may review the cleanup process and shall invite all persons involved in that process to participate in the review. The purpose of this review is to monitor the executed cleanup and suggest any necessary modifications to the procedures. The Beach Management Committee or the Conservation

Commission shall provide a written summary of its findings to all interested parties.

## **PART 5 - EMERGENCY CONDITIONS**

Emergency conditions are a result of natural changes in the Beach and Dune Area, which threaten the public safety, health and welfare of the community within the North Nantasket Beach area. Moderate to major coastal storms, which include winter-type northeasters, tropical storms and the rare hurricane, generally consist of high onshore winds (sustained over 35MPH with stronger gusts) that work in conjunction with elevated tides and storm driven waves to produce storm surges and overwash. Major coastal flooding and beach erosion occurs at tide heights over 13.5' at Boston. The combined forces of wind and water that move beach and dune sediments landward into homes, businesses, roads and parking areas constitute the greatest threat for an emergency. Precipitation (i.e. rain; snow and ice) may also contribute to emergency conditions, but that is addressed in the following section (Part 6 Winter Conditions).

Access to the roadways is imperative for police, fire, rescue and evacuation operations. The primary differences between Northeasters and Hurricanes may provide for different emergency responses. Typically, Northeasters have a longer duration (1-3 days) over several high tides. As a result, flood waters, sediment and debris may accumulate on Beach Avenue and connecting streets several times during a storm. Unless access is restored after each high tide, the severity of the emergency may not be controlled. In contrast, however, hurricanes are fast moving storms that occur during one tidal cycle (less than 12 hours) with a storm surge that extends further landward or inland. Because the wind speeds are greater than Northeasters, wind-driven debris may pose a greater threat for an emergency. Access ways will most likely need to be cleared only once, after the entire hurricane has passed.

- 5.1 Emergency preparation actions before a storm occurs may include: removing objects (e.g. trash cans, benches, removable walkways) and debris that could act as projectiles; filling beach access ways with sediments to control overwash damage; and taking photos of pre-storm conditions.
- 5.2 For safety reasons, emergency response actions during the storm should ideally occur during period below half-tide tides.
- 5.3 Sediment and debris cleared from Beach Avenue and connecting streets

should be stockpiled in areas that are not threatened by continued storm processes. Debris should be removed and discarded properly as soon as is practicable. All sediment should be returned to the Beach and Dune Area based on the recommendation of the Conservation Administrator.

- 5.4 Post-emergency actions may include: repairs to eroded sections of the Beach and Dune Area; re-establishing the beach access ways; and taking photos of post-storm conditions.
- 5.5 Town debris removal costs may be reimbursable by the state and federal government, so accurate records of location, amount, manpower and equipment usage should be kept.

## **PART 6 - WINTER CONDITIONS**

Ice and snow accumulations with and without the influence of major coastal storms pose winter emergency conditions when roadways are impassible.

- 6.1 Removal operations should be confined to the paved portions of Beach Avenue and connecting streets. While plowing, windrows of snow may be formed along the dunes parallel with Beach Avenue. However, the natural Beach and Dune Area should not be excavated for any reason.
- 6.2 To protect beach grass from being smothered with sand and other material the Town will, to the greatest degree possible, minimize placement of snow on the dunes during snow plowing operations.
- 6.3 Water accumulation from melting snow or flooding may be relieved with pumps. Discharge may take place on the beach; no discharge may take place on the dunes. If erosion occurs it will be repaired.

## **PART 7 – PENALTIES**

- 7.1 The DPW shall review this plan with the Conservation Commission before each seasonal clean up and maintenance of the beach. The DPW shall always keep this plan on hand, and review it periodically keeping in mind the understanding of conservation principles used in this plan.
- 7.2 The Police Department shall review this Plan as well as the Wetland Protection Act with the Conservation Commission in order to understand how these affect the use of the beach in the Town of Hull.

- 7.3 Whoever violates any of the provisions of this Plan shall be deemed to have violated the provisions of the Code of the Town of Hull authorizing this Plan. Violators shall be subject to a fine of up to \$300.00, or such maximum fines as may be otherwise provided by law, whichever is greater. A violation of this Plan may also be penalized by a non criminal disposition as provided for in M.G.L. C. 40, section 21 D and as provided for under Chapter 1 of the Code of the Town of Hull. Each day's violations shall constitute a separate violation.
- 7.4 If any person or entity violates the provisions of this Plan, or causes damage to the Dune or Beach, including but not limited to physically damaging or destroying the access control structures, signs, and beach grass, or lowering the elevation of the dune, the Town may initiate civil action against such person or entity to protect the Dune and Beach system, and to restore the same. Nothing contained herein shall however, operate to limit civil actions or criminal prosecutions which the Town may take under this Plan, or any other applicable law, rule, regulation or right.

**NOTE: Part 7 regarding penalties is included in this draft and represents current policy until and unless changed. The Beach Management Committee requests to have a public discussion concerning the penalties for violation of this plan.**

## **PART 8 – EFFECT OF PLAN**

- 8.1 This plan represents a series of objectives for the Town of Hull. It is recognized that not all objectives will be capable of completion at this time. Accordingly, a failure to comply with the provisions of the Plan shall not cause an invalidation of any acts nor shall the same cause or be the basis of any action against the Town of Hull. Any deviation from the Plan shall, however, be for a good cause.
- 8.2 This Plan does not attempt to define and regulate all parameters of beach and dune delineation, function or management, and the Town of Hull declares its intent to review and update this Plan as may be needed from time to time to reflect appropriate new and beneficial knowledge. Any proposal for modifications to the Plan shall be submitted to the Board of Selectmen for review.
- 8.3 This Plan is declared to be an exercise of the police power in the interest of safety and welfare for the protection of persons and property. In addition to any other power that the Town may have to adopt this Plan, its adoption is also pursuant to the authority to adopt same as provided for under Chapter\_81\_of the Code of the Town of Hull.

- 8.4 If any parts of this Plan are for any reason held to be invalid, such adjudication shall not affect the validity of the remaining portions of this Plan.
- 8.5 This Plan shall take effect upon its final adoption by the Selectmen.
- 8.6 Any proposals for amending the Plan should be sent to the Board of Selectman.

## **PART 9 - BEACH MANAGEMENT FUND**

The Town may establish a "Beach Management Fund". All moneys in said fund shall be used for purposes regarding regulation, preservation, and protection of the Beach and Dune system of the Town of Hull.

## **PART 10 - DEFINITIONS**

For the purposes of this Plan, the following words shall have the meaning given herein:

- 10.1 Access Control Structure or Walkway is a constructed means of crossing the Dune Area in Accordance with drawings approved by the Hull Board of Selectmen, the Town Manager, and permitted by the Conservation Commission.
- 10.2 Beach Area is that area between the extreme low tide line and the seaward edge of the Dune Area as hereinafter defined. This definition is consistent with "coastal beach" as defined in the Wetland Protection Act Regulations.
- 10.3 Conservation Administrator shall mean a person knowledgeable of the beach, the dunes and their care retained by the Town of Hull. In any periods during which no such expert is regularly retained, it shall mean such other knowledgeable person designated by the Town Manager.
- 10.4 Debris means any manmade substance either washed up or left behind on the beach. Examples include balloons, plastic bags, buoys, lobster traps, and pilings. It does not include natural vegetation or seaweed known as wrack.
- 10.5 Dune Area means any natural hill, mound or ridge of sediment landward of a coastal beach deposited by wind action or storm overwash. Dune Area also means sediment deposited by artificial means, and serving the purpose of storm damage prevention or flood control. This definition is consistent with "coastal dune" as defined in the Wetland Protection Act Regulations.
- 10.6 Landward Edge of the Dune is the intersection line of the backslope of the dune and the grade of the land extending from the Easterly line of Beach Avenue where Beach Avenue is constructed, or the Westerly side of Beach

Avenue as shown on the Town of Hull Assessors map where Beach Avenue is not constructed adjoining oceanfront properties.

- 10.7 Natural Vegetation shall include the terms "native vegetation" or "indigenous vegetation". Specifically, it shall include such plants as beachgrass (*Ammophila breviligulata*), dusty miller (*Artemisia stelleriana*), sea rocket (*Cakile edentula*), seaside goldenrod (*Solidago sempervirens*), bayberry (*Myrica Pensylvanica*), beach pea (*Lathyrus japonicus*), salt-spray rose (*Rosa rugosa*), or seaside spurge (*Euphorbia polygonifolia*), or any other plants which normally grow in sand, or may be planted on the slopes of dunes or behind them, no distinction being made as to how such plants are introduced into their location.
- 10.8 Sand Fence shall include the term "snow fence" of a barricade type erected in a line or a pattern to accumulate sand and aid in the formation of a dune. It also may be used to direct the flow of pedestrian traffic. The following types shall be used: Picket type consisting of light wooden fence held together by wire, and secured by posts; Such other material as may be designed and approved for the same purpose by the Hull Board of Selectmen, the Town Manager, and the Conservation Commission.
- 10.9 Seaward Edge of the Dune is the intersection line between the foreslope of the dune and the gradient of the Beach Area, the Vegetation Line, or the Upper Driftline, whichever is the more easterly or seaward.
- 10.10 Seaweed is any of numerous marine plants and algae, such as Irish Moss (*Chondrus crispus*), Kelps (*Laminaria spp.*, *Alaria esculenta*; *Agarum cribrosum*), rockweeds (*focus spp.*), sea lettuce (*Ulva lactuca*) and deadman fingers (*Codium fragile*).
- 10.11 Storm Emergency is a situation so declared by the public authority having the jurisdiction and authority to declare an emergency.
- 10.12 Summer Season is Memorial Day through Labor Day.
- 10.13 Upper Driftline or Wrack Line is that line produced by the winter spring tides (highest tides of the year) which contain natural deposits of ocean borne debris/flotsam such as seaweed and the seeds, rhizomes, or detached plants, which can germinate and/or grow to produce a zone of new dune vegetation.
- 10.14 Vegetation Line is that line separating the most seaward extent of naturally occurring or planted salt tolerant plants from the beach.
- 10.15 Wrack or drift-line is washed-up marine vegetation and organic material deposited on the backshore during high tides and storms. These deposits

often contain fragments and seeds of dune plants, which are beneficial to dune redevelopment.

#### **PART 11 - BIBLIOGRAPHY**

- The Guidelines for Barrier Beach management in Massachusetts, A Report of the Massachusetts Barrier Beach Task Force (MCZM, 1994) was utilized as a reference document for resource impact information and some general recommendations in the Management Plan.
- The Wetlands Protection Act Regulations are found in 310 Code of Massachusetts Regulations 10.00.
- The Wetlands Protection Act is found at Massachusetts General Laws Chapter 131, Section 140.